



17 July 1996

Department of the Navy  
Northern Division, Naval Facilities Engineering Command  
10 Industrial Highway, Mail Stop 82  
Lester, Pennsylvania 19113  
Attn: Code 1812 (BJH)

RE: Results of Baseline Ground-Water Sampling Conducted 10 June 1996  
at the Navy Fuel Farm, Naval Air Station, Brunswick, Maine  
Contract D62472-92-D-1296, Contract Task Order No. 0035  
EA Project No. 29600.35

Dear Mr. Helland:

EA Engineering, Science, and Technology is pleased to provide the enclosed field and laboratory data in support of the baseline ground-water sampling activities performed at the Navy Fuel Farm, Naval Air Station, Brunswick, Maine (Figure 1). Deliverables forwarded by this submission include ground-water purging and sampling forms and analytical results for ground-water samples collected at 6 site monitoring wells.

## GROUND-WATER SAMPLING PROGRAM

Ground-water sampling was conducted on 10 June 1996 at 6 of 9 ground-water monitoring wells scheduled for sample collection (MW-44, MW-49, MW-51, MW-54, MW-58, and MW-62). Well MW-61 was not sampled due to the fact that it had been damaged during construction (broken steel cover, no cap, and a broken well riser). Well MW-56 was not sampled due to the fact that the steel casing was bent and the well could not be bailed. Well MW-211 was not sampled due to the presence of 0.08 ft of light, non-aqueous phase liquid (LNAPL) in the well. Prior to sampling, each well was gauged to determine the absence/presence of LNAPL, depth to ground water, and depth to bottom of well using an Oil Recovery Systems, Inc. oil/water interface probe graduated at 0.01-ft intervals. Temperature, pH, conductivity, dissolved oxygen, and Eh were measured prior to, during, and following well purging using a Hydrolab® Model H20®G multiparameter water quality meter.

Each well was purged a minimum of 4 well volumes of water prior to the collection of ground-water samples. Well purging and subsequently ground-water sampling were completed using new, dedicated, disposable polypropylene bailers and new, dedicated, disposable nylon line. Attachment A provides copies of the Field Record of Well Gauging, Purging, and Sampling forms.

One ground-water sample was collected from each well (6 total); in addition, 1 duplicate sample was collected from MW-44. One equipment rinsate blank was collected by running deionized water through a new, disposable polypropylene bailer and into the appropriate sample containers. To assess the potential for contamination during sample transport, 1 trip blank sample was also analyzed. Samples were analyzed by EA Laboratories, a State of Maine Department of Human Services-approved laboratory. Ground-water samples and the equipment rinsate blank were submitted for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl tertiary-butyl ether (MTBE) by EPA Method 602, total petroleum hydrocarbons (TPH) as Gasoline by State of Maine Department of Environmental Protection Laboratory Operating Procedure (MEDEP LOP) Method 4.2.1, and TPH as Fuel Oil by MEDEP LOP Method 4.1.1. The trip blank sample was analyzed for the presence of BTEX and MTBE by EPA Method 602 only. The analytical results are summarized in Table 1. Attachment B contains the complete analytical report.

#### SUMMARY OF RESULTS

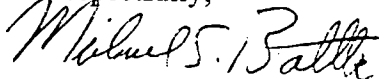
Total BTEX concentrations were reported as non-detect in the 6 ground-water samples. MTBE was reported in the ground-water sample collected from MW-51 at a concentration of 21  $\mu\text{g/L}$ . Total BTEX and MTBE were not detected in the duplicate sample collected at MW-44; these results are in agreement with analytical results for the original sample. BTEX and MTBE were not detected in the equipment rinsate blank or the trip blank.

TPH as Gasoline was reported as non-detect in the 6 ground-water samples and the associated equipment rinsate blank. TPH as Gasoline was reported as non-detect for the duplicate sample collected at MW-44, which is in agreement with the original sample.

TPH as Fuel Oil was reported as non-detect in the 6 ground-water samples and the associated equipment rinsate blank. TPH as Fuel Oil was not detected for the duplicate sample collected at MW-44, which is in agreement with the original sample.

It has been our pleasure providing Northern Division these data. If there are any questions, please do not hesitate to call.

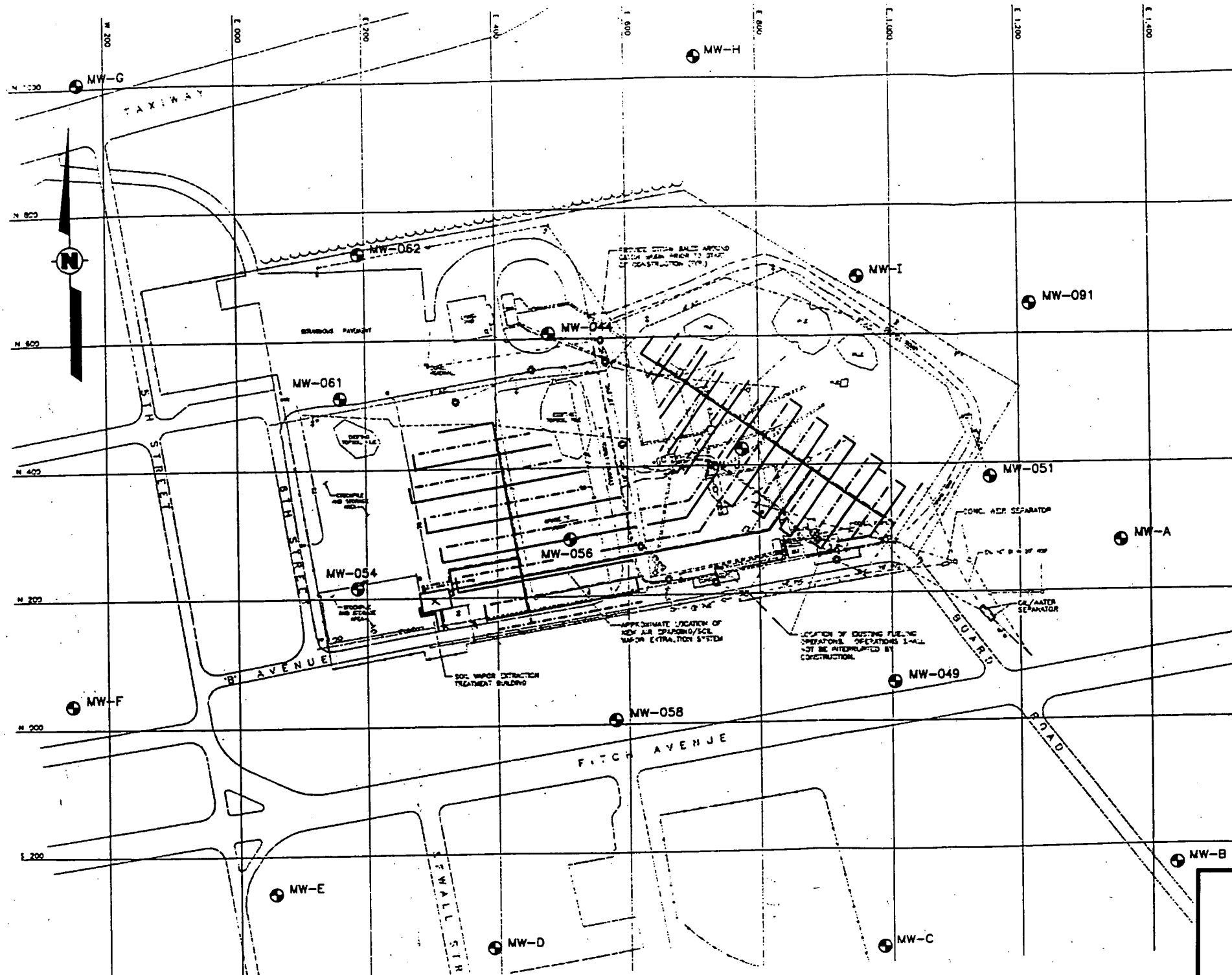
Respectfully,



Michael S. Battle, P.G.  
CTO Manager

MSB/caw  
Attachments

cc: J. Caruthers (NAS)  
C. Houlik (EA)



**LEGEND:**

- MONITORING WELL LOCATION
- CHAIN LINK FENCE
- SEDIMENT FENCE
- - - SOIL VAPOR EXTRACTION LINE
- AIR SPARGING LINE

NOTE: BASEMAP AND MONITORING WELL LOCATIONS TRANSCRIBED FROM REPORT ENTITLED "PRELIMINARY OPERATIONS AND MAINTENANCE PLAN FOR THE AIR SPARGING/SOIL VAPOR EXTRACTION SYSTEM FUEL FARM REMEDIATION BRUNSWICK NAVAL AIR STATION, BRUNSWICK, MAINE." PREPARED BY OHM CORPORATION, NOVEMBER 1995.

DWG. FILE F:\CAD\12197\14\FUELFARM PLOT SCALE: 1"=1'

**SITE PLAN SHOWING  
MONITORING WELL LOCATIONS  
FUEL FARM SVE/AAS SYSTEM  
NAVAL AIR STATION, BRUNSWICK, MAINE**

**FIGURE 1**

DATE  
18 JULY 1996  
DESIGNED BY  
CJV  
DRAWN BY  
CJV  
CHECKED BY  
MSB  
PROJECT MANAGER  
MSB

**EA** ENGINEERING,  
SCIENCE, AND  
TECHNOLOGY  
  
3 WASHINGTON CENTER  
THE MAPLE BUILDING  
NEWBURGH, NEW YORK 12550  
(914) 565-8100

PROJECT NUMBER  
29600.35  
SCALE  
1"=30'  
FILE NAME  
FUELFARM  
DRAWING NUMBER  
—  
SHEET NUMBER  
1 OF 1

TABLE 1 SUMMARY OF ANALYTICAL RESULTS FOR GROUND-WATER  
SAMPLES COLLECTED 10 JUNE 1996 AT THE NAVY FUEL FARM,  
NAVAL AIR STATION, BRUNSWICK, MAINE

[illegible]

**Attachment A**

**Field Record of Well Gauging, Purging,  
and Sampling Forms**



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## FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Project Name: <u>Navy Fuel Farm</u>	Project No.: <u>2960035</u>	Date: <u>6/10/96</u>
EA Personnel: <u>SYC, MDC</u>	Purge Method: <u>hand bailer</u>	
Weather/Temperature/Barometric Pressure: <u>rainy, cool, 60</u>		Time: <u>1440</u>

Well No. <u>MW-58</u>	Well Condition: <u>Good</u>
Well Diameter: <u>2</u>	Measurement Reference: <u>TOC</u>
Well Volume Calculations	
A. Depth to Water (ft): <u>16.45</u>	D. Well Volume/ft: <u>0.16</u>
B. Total Well Depth (ft): <u>6.18</u>	E. Total Well Volume (gal) [C*D]: <u>1.64</u>
C. Water Column Height (ft): <u>10.27</u>	F. Five Well Volumes (gal): <u>8.2</u>

Parameter	Beginning	1 Volume	2 Volumes	3 Volumes	4 Volumes	5 Volumes
Time (min.)	<u>1440</u>	<u>1444</u>	<u>1447</u>	<u>1451</u>	<u>1455</u>	
Depth to Water (ft)	<u>6.18</u>	<u>6.50</u>	<u>6.50</u>	<u>6.55</u>	<u>6.70</u>	
Purge Rate (gpm)	<u>—</u>	<u>41gpm</u>	<u>41gpm</u>	<u>41gpm</u>	<u>41gpm</u>	
Volume Purged (gal)	<u>—</u>	<u>1.6</u>	<u>3.3</u>	<u>5.0</u>	<u>6.5</u>	
pH	<u>5.65</u>	<u>5.68</u>	<u>5.63</u>	<u>5.60</u>	<u>5.57</u>	
Temperature (°C)	<u>11.72</u>	<u>10.61</u>	<u>10.58</u>	<u>10.54</u>	<u>10.56</u>	
Conductivity (μmhos/cm)	<u>0.0424</u>	<u>0.0467</u>	<u>0.0499</u>	<u>0.0502</u>	<u>0.0506</u>	
Dissolved Oxygen (mg/L)	<u>2.25</u>	<u>2.99</u>	<u>3.02</u>	<u>3.04</u>	<u>3.16</u>	
TOTAL QUANTITY OF WATER REMOVED (gal): <u>6.5</u>						
COMMENTS AND OBSERVATIONS: <u>MW 96-58-01</u>						



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## FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Project Name: <u>W20 Fuel Farm</u>	Project No.: <u>2960035</u>	Date: <u>6/10/96</u>
EA Personnel: <u>SYC MDC</u>	Purge Method: <u>hand bailer</u>	
Weather/Temperature/Barometric Pressure: <u>cool, rainy, 60</u>		Time: <u>1505</u>

Well No. <u>MW-49</u>	Well Condition: <u>Good</u>
Well Diameter: <u>2</u>	Measurement Reference: <u>TCC</u>
Well Volume Calculations	
A. Depth to Water (ft): <u>12.37</u>	D. Well Volume/ft: <u>0.16</u>
B. Total Well Depth (ft): <u>6.74</u>	E. Total Well Volume (gal) [C*D]: <u>0.90</u>
C. Water Column Height (ft): <u>5.63</u>	F. Five Well Volumes (gal): <u>4.5</u>

Parameter	Beginning	1 Volume	2 Volumes	3 Volumes	4 Volumes	5 Volumes
Time (min.)	<u>1508</u>	<u>1512</u>	<u>1515</u>	<u>1518</u>	<u>1521</u>	
Depth to Water (ft)	<u>6.74</u>	<u>6.84</u>	<u>8.20</u>	<u>9.93</u>	<u>10.86</u>	
Purge Rate (gpm)	<u>—</u>	<u>41 gpm</u>	<u>41 gpm</u>	<u>41 gpm</u>	<u>41 gpm</u>	
Volume Purged (gal)	<u>—</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
pH	<u>5.16</u>	<u>5.18</u>	<u>5.26</u>	<u>5.30</u>	<u>5.34</u>	
Temperature (°C)	<u>10.80</u>	<u>9.93</u>	<u>9.63</u>	<u>8.93</u>	<u>8.92</u>	
Conductivity (μmhos/cm)	<u>0.0964</u>	<u>0.1018</u>	<u>0.1130</u>	<u>0.1363</u>	<u>0.1380</u>	
Dissolved Oxygen (mg/L)	<u>2.84</u>	<u>3.12</u>	<u>3.08</u>	<u>3.08</u>	<u>3.04</u>	
TOTAL QUANTITY OF WATER REMOVED (gal): <u>4</u>						
COMMENTS AND OBSERVATIONS: <u>MW 96-49-01</u>						



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## FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Project Name: <u>Navy Ford Farm</u>	Project No.: <u>2960035</u>	Date: <u>6/16/96</u>
EA Personnel: <u>SYC, MDC</u>	Purge Method: <u>hand bailer</u>	
Weather/Temperature/Barometric Pressure: <u>rainy, cool 60</u>		Time: <u>1305</u>

Well No. <u>MW-62</u>	Well Condition: <u>Good</u>
Well Diameter: <u>2</u>	Measurement Reference: <u>TOC</u>
Well Volume Calculations	
A. Depth to Water (ft): <u>16.93</u>	D. Well Volume/ft: <u>0.16</u>
B. Total Well Depth (ft): <u>8.63</u>	E. Total Well Volume (gal) [C*D]: <u>1.33</u>
C. Water Column Height (ft): <u>8.30</u>	F. Five Well Volumes (gal): <u>6.65</u>

Parameter	Beginning	1 Volume	2 Volumes	3 Volumes	4 Volumes	5 Volumes
Time (min.)	<u>1210</u>	<u>1215</u>	<u>1218</u>	<u>1221</u>	<u>1224</u>	
Depth to Water (ft)	<u>8.63</u>	<u>8.70</u>	<u>8.74</u>	<u>8.71</u>	<u>8.72</u>	
Purge Rate (gpm)	<u>—</u>	<u>41gpm</u>	<u>41gpm</u>	<u>41gpm</u>	<u>41gpm</u>	
Volume Purged (gal)	<u>—</u>	<u>1.5</u>	<u>3.0</u>	<u>4.5</u>	<u>6.0</u>	
pH	<u>3.50</u>	<u>5.71</u>	<u>5.75</u>	<u>5.70</u>	<u>5.72</u>	
Temperature (°C)	<u>10.26</u>	<u>8.44</u>	<u>7.92</u>	<u>7.90</u>	<u>7.85</u>	
Conductivity (μmhos/cm)	<u>0.0571</u>	<u>0.0925</u>	<u>0.0903</u>	<u>0.0900</u>	<u>0.0892</u>	
Dissolved Oxygen (mg/L)	<u>7.26</u>	<u>5.06</u>	<u>5.09</u>	<u>5.02</u>	<u>5.01</u>	
TOTAL QUANTITY OF WATER REMOVED (gal): <u>6.0</u>						
COMMENTS AND OBSERVATIONS: <u>MW96-62-01 MS/MSD</u>						





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## FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Project Name: <u>Navy Fuel Farm</u>	Project No.: <u>2960035</u>	Date: <u>6/16/96</u>
EA Personnel: <u>SYC, MNC</u>	Purge Method: <u>hand bailer</u>	
Weather/Temperature/Barometric Pressure: <u>Cool, Rainy, 60</u>		Time: <u>1355</u>

Well No. <u>MW-54</u>	Well Condition: <u>Good</u>
Well Diameter: <u>2</u>	Measurement Reference: <u>TCC</u>
Well Volume Calculations	
A. Depth to Water (ft): <u>16.00</u>	D. Well Volume/ft: <u>0.16</u>
B. Total Well Depth (ft): <u>6.15</u>	E. Total Well Volume (gal) [C*D]: <u>1.58</u>
C. Water Column Height (ft): <u>9.85</u>	F. Five Well Volumes (gal): <u>7.90</u>

Parameter	Beginning	1 Volume	2 Volumes	3 Volumes	4 Volumes	5 Volumes
Time (min.)	<u>1400</u>	<u>1405</u>	<u>1409</u>	<u>1413</u>	<u>1417</u>	
Depth to Water (ft)	<u>6.15</u>	<u>6.25</u>	<u>6.25</u>	<u>6.32</u>	<u>6.42</u>	
Purge Rate (gpm)	<u>—</u>	<u>12gpm</u>	<u>44gpm</u>	<u>41gpm</u>	<u>41gpm</u>	
Volume Purged (gal)	<u>—</u>	<u>1.6</u>	<u>3.2</u>	<u>4.8</u>	<u>6.4</u>	
pH	<u>4.47</u>	<u>5.43</u>	<u>5.47</u>	<u>5.49</u>	<u>5.47</u>	
Temperature (°C)	<u>11.92</u>	<u>9.51</u>	<u>9.46</u>	<u>9.49</u>	<u>9.45</u>	
Conductivity (μmhos/cm)	<u>0.1119</u>	<u>0.248</u>	<u>0.221</u>	<u>0.195</u>	<u>0.201</u>	
Dissolved Oxygen (mg/L)	<u>4.04</u>	<u>3.64</u>	<u>3.66</u>	<u>3.67</u>	<u>3.64</u>	
TOTAL QUANTITY OF WATER REMOVED (gal): <u>6.4</u>						
COMMENTS AND OBSERVATIONS: <u>MW96-54-01</u>						



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## FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Project Name: <u>N.W. Fuel Farm</u>	Project No.: <u>2960035</u>	Date: <u>6/10/96</u>
EA Personnel: <u>SYC MDC</u>	Purge Method: <u>hand hailing</u>	
Weather/Temperature/Barometric Pressure: <u>cool rainy bc</u>		Time: <u>1120</u>

Well No. <u>MW-44</u>	Well Condition: <u>Good</u>
Well Diameter: <u>2</u>	Measurement Reference: <u>TCC</u>
Well Volume Calculations	
A. Depth to Water (ft): <u>15.95</u>	D. Well Volume/ft: <u>0.16</u>
B. Total Well Depth (ft): <u>2.76</u>	E. Total Well Volume (gal) [C*D]: <u>2.11</u>
C. Water Column Height (ft): <u>13.19</u>	F. Five Well Volumes (gal): <u>10.55</u>

Parameter	Beginning	1 Volume	2 Volumes	3 Volumes	4 Volumes	5 Volumes
Time (min.)	<u>1120</u>	<u>1125</u>	<u>1130</u>	<u>1135</u>	<u>1140</u>	
Depth to Water (ft)	<u>2.76</u>	<u>2.84</u>	<u>2.90</u>	<u>2.92</u>	<u>2.91</u>	
Purge Rate (gpm)	<u>—</u>	<u>21gpm</u>	<u>21gpm</u>	<u>4gpm</u>	<u>21gpm</u>	
Volume Purged (gal)	<u>—</u>	<u>2.5</u>	<u>5</u>	<u>7.5</u>	<u>10.0</u>	
pH	<u>5.76</u>	<u>5.74</u>	<u>5.70</u>	<u>5.71</u>	<u>5.68</u>	
Temperature (°C)	<u>14.99</u>	<u>11.33</u>	<u>11.26</u>	<u>11.25</u>	<u>11.26</u>	
Conductivity (μmhos/cm)	<u>0.0635</u>	<u>0.0677</u>	<u>0.0632</u>	<u>0.0608</u>	<u>0.0612</u>	
Dissolved Oxygen (mg/L)	<u>2.83</u>	<u>3.99</u>	<u>3.96</u>	<u>3.92</u>	<u>3.94</u>	
TOTAL QUANTITY OF WATER REMOVED (gal): <u>10.0</u>						
COMMENTS AND OBSERVATIONS: <u>MW 96-44-01</u> , <u>MW 96-101-01</u>						
<u>1145</u> <u>1200</u>						



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## FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Project Name: <u>Navy Fuel Farm</u>	Project No.: <u>2960035</u>	Date: <u>6/10/96</u>
EA Personnel: <u>SYC, MDC</u>	Purge Method: <u>hand bailing</u>	
Weather/Temperature/Barometric Pressure: <u>cool, rainy, 60</u>		Time: <u>1110</u>

Well No. <u>MW-56</u>	Well Condition: <u>Casing bent</u>
Well Diameter: <u>2</u>	Measurement Reference: <u>TOC</u>
Well Volume Calculations	
A. Depth to Water (ft): <u>14.50</u>	D. Well Volume/ft: <u>0.16</u>
B. Total Well Depth (ft): <u>4.51</u>	E. Total Well Volume (gal) [C*D]: <u>1.6</u>
C. Water Column Height (ft): <u>9.99</u>	F. Five Well Volumes (gal): <u>8.0</u>

Parameter	Beginning	1 Volume	2 Volumes	3 Volumes	4 Volumes	5 Volumes
Time (min.)						
Depth to Water (ft)						
Purge Rate (gpm)						
Volume Purged (gal)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
TOTAL QUANTITY OF WATER REMOVED (gal): _____						
COMMENTS AND OBSERVATIONS: <u>Unable to fit bailer into casing</u>						



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## FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Project Name: <u>Navy Fuel Farm</u>	Project No.: <u>2960035</u>	Date: <u>6/10/96</u>
EA Personnel: <u>MW-211 J</u>	Purge Method: <u>hand bailer</u>	
Weather/Temperature/Barometric Pressure: <u>cool, rainy, 60°</u>		Time: <u>1100</u>

Well No. <u>MW-211 J</u>	Well Condition: <u>Good</u>
Well Diameter: <u>2</u>	Measurement Reference: <u>TOC</u>
Well Volume Calculations	
A. Depth to Water (ft): <u>985</u>	D. Well Volume/ft: <u>        </u>
B. Total Well Depth (ft): <u>690</u>	E. Total Well Volume (gal) [C*D]: <u>        </u>
C. Water Column Height (ft): <u>        </u>	F. Five Well Volumes (gal): <u>        </u>

Parameter	Beginning	1 Volume	2 Volumes	3 Volumes	4 Volumes	5 Volumes
Time (min.)						
Depth to Water (ft)						
Purge Rate (gpm)						
Volume Purged (gal)						
pH						
Temperature (°C)						
Conductivity (µmhos/cm)						
Dissolved Oxygen (mg/L)						
TOTAL QUANTITY OF WATER REMOVED (gal): <u>        </u>						
COMMENTS AND OBSERVATIONS: <u>0.08 ft of product could not</u> <u>sample</u>						



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## FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Project Name: Navy Fuel Farm	Project No.: 2960035	Date: 6/1/96
EA Personnel: SYC, MDC	Purge Method: hand bailer	
Weather/Temperature/Barometric Pressure: cool, cloudy, 60°		Time: 0945

Well No. MW-51	Well Condition: Good
Well Diameter: 2	Measurement Reference: TOC
Well Volume Calculations	
A. Depth to Water (ft): 16.75	D. Well Volume/ft: 0.16
B. Total Well Depth (ft): 4.10	E. Total Well Volume (gal) [C*D]: 2.6
C. Water Column Height (ft): 12.65	F. Five Well Volumes (gal): 10.0

Parameter	Beginning	1 Volume	2 Volumes	3 Volumes	4 Volumes	5 Volumes
Time (min.)	950	955	1000	1005	1010	1015
Depth to Water (ft)	4.10	4.70	4.60	4.27	4.25	4.22
Purge Rate (gpm)	—	4.1gpm	4.1gpm	4.1gpm	4.1gpm	4.1gpm
Volume Purged (gal)	—	2	4	6	8	10
pH	6.72	6.12	6.09	5.86	5.82	5.80
Temperature (°C)	12.26	9.51	9.08	9.00	9.10	9.12
Conductivity (µmhos/cm)	0.0523	0.0775	0.0575	0.0557	0.0560	0.0550
Dissolved Oxygen (mg/L)	9.03	3.87	3.80	3.76	3.77	3.79
TOTAL QUANTITY OF WATER REMOVED (gal):		10				
COMMENTS AND OBSERVATIONS:		MW96-51-01				



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## FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

Project Name: <u>Navy Fuel Farm</u>	Project No.: <u>2960035</u>	Date: <u>6/16/96</u>
EA Personnel: <u>SYC, MDC</u>	Purge Method: <u>hand bailing</u>	
Weather/Temperature/Barometric Pressure: <u>cool, rainy, 60°</u>	Time:	

Well No. <u>MW-61</u>	Well Condition: <u>poor, curb box, PVC damaged</u>
Well Diameter: <u>2</u>	Measurement Reference: <u>TOC</u>
Well Volume Calculations	
A. Depth to Water (ft):	D. Well Volume/ft:
B. Total Well Depth (ft):	E. Total Well Volume (gal) [C*D]:
C. Water Column Height (ft):	F. Five Well Volumes (gal):

Parameter	Beginning	1 Volume	2 Volumes	3 Volumes	4 Volumes	5 Volumes
Time (min.)						
Depth to Water (ft)						
Purge Rate (gpm)						
Volume Purged (gal)						
pH						
Temperature (°C)						
Conductivity (µmhos/cm)						
Dissolved Oxygen (mg/L)						
TOTAL QUANTITY OF WATER REMOVED (gal):						
COMMENTS AND OBSERVATIONS: <u>Well not sampled due to damage to Steel Cover and PVC casing</u>						

**Attachment B**

**Analytical Report  
for Ground-Water Samples**



26 June 1996

Mr. Michael S. Battle  
EA Engineering, Science and Technology, Inc.  
3 Washington Center  
Newburgh, NY 12550

RECEIVED

JUL 1 1996

EA Engineering, Science, and Technology  
Newburgh, NY

Re: NAS Brunswick (29600.35)

Dear Mr. Battle:

Enclosed is a revision to our report on the analysis of eight water samples collected for the NAS Brunswick project on 10 June 1996. The narrative has been reprinted to quote the correct method in the gasoline section. I apologize for this inconvenience.

Please contact me if you have any questions or require further information and refer to report 960940.

Sincerely,

Natasha K. Sullivan  
Laboratory Project Manager

enclosure



---

LABORATORY DATA REPORT

Prepared for:

NAS Brunswick

Prepared by:

EA Laboratories  
19 Loveton Circle  
Sparks, Maryland 21152

June 1996

1. NARRATIVE

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NAS Brunswick  
EA Laboratories Report No. 960940

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EA Laboratories  
ANALYTICAL NARRATIVE

Client: **EA Engineering, Science & Tech.** Laboratory Project Manager: **Natasha K. Sullivan**  
Site: **NAS Brunswick** EA Laboratories Report: **960940**  
Project number: **29600.35** Date: **26 June 1996**

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This report contains the results of the analysis of eight water samples collected on 10 June 1996 in support of the referenced project.

***SAMPLE RECEIPT***

The samples and one trip blank arrived intact Federal Express at EA Laboratories on 12 June 1996. Upon receipt, the samples and blank were inspected and compared with the chain-of-custody record. The samples and blank were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis.

<u>Client Sample Designation</u>	<u>EA Lab Number</u>
RB96-01-01	9609046
MW96-51-01	9609047
MW96-44-01	9609048
MW96-D1-01	9609049
MW96-62-01	9609050
MW96-54-01	9609051
MW96-58-01	9609052
MW96-49-01	9609053
Trip blank	9609054

Following this narrative section are data qualifiers (Table 1) and the original chain-of-custody record. Analytical results and quality control deliverable requirements of this project.

***QUALITY CONTROL***

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the

EA Laboratories  
ANALYTICAL NARRATIVE

Client: EA Engineering, Science & Tech. Laboratory Project Manager: **Natasha K. Sullivan**  
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sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

**AROMATIC VOLATILES BY GC - WATER (EA9609046 - EA9609054)**

Sample Chronology: Nine samples were analyzed on 25 June 1996 for BTEX and MTBE by USEPA 40CFR, Part 136, Appendix A, Method 602. All specified holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

**VOLATILE TOTAL PETROLEUM HYDROCARBONS (VTPH) - WATER (EA9609046 - EA9609053)**

Sample Chronology: Eight samples were analyzed on 13 June 1996 by the Maine Method 4.2.1 TPH as Gasoline. All specified holding times were met.

EA Laboratories  
ANALYTICAL NARRATIVE

Client: **EA Engineering, Science & Tech.** Laboratory Project Manager: **Natasha K. Sullivan**  
Site: **NAS Brunswick** EA Laboratories Report: **960940**  
Project number: **29600.35** Date: **26 June 1996**

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Laboratory Method Performance: All other laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

**EXTRACTABLE TOTAL PETROLEUM HYDROCARBONS (ETPH) - WATER (EA9609046 - EA9609053)**

Sample Chronology: Eight samples and associated quality control were extracted on 13 June 1996 by the Maine Method 4.1.1 TPH as Fuel. The sample extracts and associated quality control were analyzed on 23 June 1996 by the same method for Fuel Oil #2. All specified holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: Sample RB96-01-01 had the surrogate recovery of octacosane (16%) below the QC limit of 50%. This low recovery may be indicative of a bias.

All other quality control criteria were met for the reported samples.

**CERTIFICATION OF RESULTS**

The Laboratory certifies that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in EA Laboratories Quality Assurance program for other than the conditions detailed. Release of the data contained in this report has been authorized by the appropriate Laboratory Manager as verified by the following signature.

---

Phyllis Christopher, Production Manager 26 June 1996

TABLE 1. ORGANIC ANALYSIS DATA QUALIFIERS

ND or U Indicates a compound on the target compound list (TCL) was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and, if a soil sample, for percent moisture. For example, 10 U is used for phenol in water if the sample final volume is the protocol-specified final volume. If a 1-to-10 dilution of the extract was necessary, the reported limit is (10 x 10 U) or 100 U. For a soil sample, the value is also adjusted for percent moisture. For example, if the sample had 24% moisture and a 1-to-10 dilution factor, the soil sample quantitation limit for phenol (330 U) would be corrected as follows:

$$\text{Reported limit} = (330 \text{ U}) \times df / D$$

where:

$$D = (100 - \% \text{ moisture}) / 100 \quad (\text{At } 24\% \text{ moisture, } D = (100 - 24) / 100 = 0.76)$$

$$df = \text{dilution factor} = 10$$

$$\text{Reported limit} = (330 \text{ U}) \times 10 / 0.76 = 4300 \text{ U (rounded to two significant figures)}$$

For soil samples subjected to gel permeation chromatography (GPC) cleanup procedures, the contract required quantitation limit (CRQL) is also multiplied by 2 to account for the fact that only half of the extract is recovered. Note: If GPC procedures are employed, the factor of 2 is not included in the dilution factor reported; a "Y" is entered for GPC (Y/N).

- TR or J Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, 2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL but greater than zero, 3) when the retention time data indicate the presence of a compound that meets the pesticide/Aroclor identification criteria and the result is less than the CRQL but greater than zero. Note: the "J" code is not used and the compound is not reported as being identified for pesticide/Aroclor results less than the CRQL, if the technical judgement of the pesticide residue analysis expert determines that the peaks used for compound identification resulted from instrument noise or other interferences (column bleed, solvent contamination, etc.). For example, if the sample quantitation limit is 10 ug/L but a concentration of 3 ug/L is calculated, report it as 3 J. The sample quantitation limit must be adjusted for dilution as discussed for the U flag.
- C This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides with concentration equal to or greater than 10 ng/uL in the final extract must be confirmed by GC/MS.
- B This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified TCL compound.
- E This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag does not apply to pesticides/PCBs analyzed by GC/EC methods. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and reanalyzed according to the specifications listed in the SOW. All such compounds with a response greater than full scale should have a concentration flagged with an "E" on Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses are reported on separate Forms I. The Form I for the diluted sample will have the "DL" suffix appended to the sample number. NOTE: For total xylenes, where three isomers are quantified as two peaks, the calibration range of each peak is considered separately; e.g., a diluted analysis is not required for total xylenes unless the concentration of either peak separately exceeds 200 ug/L.
- D This flag identifies all compounds identified in the analysis at a secondary dilution factor. If a sample or extract is reanalyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values reported on that Form I are flagged with the "D" flag.
- A This flag indicates that a TIC is a suspected aldol-condensation product.
- X Other specific flags may be required to properly define the results. If used, they are fully described and such description attached to the Sample Data Summary Package and the Case Narrative. The flags begin by using "X". If more than one flag is required, "Y" and "Z" are used, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample.
- N Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- P This flag is used for GC analyses when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form I and flagged with a "P".

## 2. CHAIN-OF-CUSTODY



Company Name: <b>EA Engineering</b>		Project Manager or Contact: <b>Mike Battle</b> Phone: <b>914-965-8100</b>		Parameters/Method Numbers for Analysis										Chain of Custody Record	
Project No. <b>2960035</b>		Project Name: <b>NAS Brunswick</b>		<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH as Gas ME DEP 4:1</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH as Fuel Oil ME DEP 4:1</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTX + MTBE EPA 602</div> </div>										<b>EA Laboratories</b> 19 Loveton Circle Sparks, MD 21152 Telephone: (410) 771-4920 Fax: (410) 771-4407	
Dept.: <b>625 Task: 3626</b>		Navy Fuel Farm													
Sample Storage Location: <b>C8-C10</b>		ATO Number: <b>5047</b>													
Page <b>1</b> of <b>1</b>		Report #: <b>960940</b>		Report Deliverables: EDD: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> DUE TO CLIENT: <b>6/26/96</b>										EA Labs Accession Number  Remarks	
Date		Time													
6/10/96		1020		X				R189161-011-011		6 X X X					
6/10/96		1030		X				MM9161-511-011		6 X X X					
		1145		X				MM9161-441-011		6 X X X					
		1200		X				MM9161-011-011		6 X X X					
		1230		X				MM9161-621-011		12 X X X					
		1425		X				MM9161-511-011		6 X X X					
		1500		X				MM9161-581-011		6 X X X					
✓		1530		X				MM9161-491-011		6 X X X					
				X				TPH pipilink		2 X					
TPH PROCEDURE PER STATE OF MAINE 1 ml FINAL VOLUME. Extraction by sep Funnel. 50 mg/L Reporting Limit. @ 6/12/96 WATCH Sample volumes 9609049, 9609052, 9609053															
Samples by: (Signature) <i>Suzanne y Chase</i>		Date/Time 6/14/96 1530		Relinquished by: (Signature) <i>Suzanne y Chase</i>				Date/Time 6/14/96 0830		Received by: (Signature) <b>+ 9609050</b>				Date/Time	
Relinquished by: (Signature)		Date/Time		Received by Laboratory: (Signature)				Date/Time		Airbill Number: 3635574025				Sample Shipped by: (Circle) Fed Ex Puro. UPS	
Cooler Temp: <b>1.8</b> C pH: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Comments: <b>POST VOA</b>		Custody Seals Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Hand Carried <input type="checkbox"/> Other:							

### 3. ORGANIC DATA

A. Aromatic Volatiles-GC

1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

RB960101

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609046F

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VF6K694F

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:DBVRX ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg)	ug/L	Q
---------	----------	--	------	---

1634-04-4-----	METHYL T-BUTYL ETHER	1.0	U
71-43-2-----	BENZENE	1.0	U
108-88-3-----	TOLUENE	1.0	U
100-41-4-----	ETHYLBENZENE	1.0	U
108-38-3/106-42-3	META & PARA XYLENES	1.0	U
95-47-6-----	ORTHO XYLENE	1.0	U

1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

Lab Name: EA LABS

Contract:

MW965101

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water) WATER

Lab Sample ID: 9609047F

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VF6K697F

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column: DBVRX ID: 0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) ug/L	Q
---------	----------	---	---

1634-04-4-----	METHYL T-BUTYL ETHER_____	21	
71-43-2-----	BENZENE_____	1.0	U
108-88-3-----	TOLUENE_____	1.0	U
100-41-4-----	ETHYLBENZENE_____	1.0	U
108-38-3/106-42-3	META & PARA XYLENES_____	1.0	U
95-47-6-----	ORTHO XYLENE_____	1.0	U

1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

Lab Name: EA LABS

Contract:

MW964401

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609048F

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VF6K698F

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column: DBVRX ID: 0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) ug/L		Q
---------	----------	---	--	---

1634-04-4-----	METHYL T-BUTYL ETHER	1.0	U
71-43-2-----	BENZENE	1.0	U
108-88-3-----	TOLUENE	1.0	U
100-41-4-----	ETHYLBENZENE	1.0	U
108-38-3/106-42-3	META & PARA XYLENES	1.0	U
95-47-6-----	ORTHO XYLENE	1.0	U

1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

MW960101

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609049F

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VF6K699F

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:DBVRX ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) ug/L	Q
---------	----------	---	---

1634-04-4-----	METHYL T-BUTYL ETHER	1.0	U
71-43-2-----	BENZENE	1.0	U
108-88-3-----	TOLUENE	1.0	U
100-41-4-----	ETHYLBENZENE	1.0	U
108-38-3/106-42-3	META & PARA XYLENES	1.0	U
95-47-6-----	ORTHO XYLENE	1.0	U

1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

MW966201

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609050F

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VF6K700F

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:DBVRX ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) ug/L		Q
1634-04-4-----	METHYL T-BUTYL ETHER	1.0	U	
71-43-2-----	BENZENE	1.0	U	
108-88-3-----	TOLUENE	1.0	U	
100-41-4-----	ETHYLBENZENE	1.0	U	
108-38-3/106-42-3	META & PARA XYLENES	1.0	U	
95-47-6-----	ORTHO XYLENE	1.0	U	



1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

MW965401

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609051F

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VF6K701F

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:DBVRX ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS		Q
		(ug/L or ug/Kg)	ug/L	
1634-04-4-----	METHYL T-BUTYL ETHER	1.0	U	
71-43-2-----	BENZENE	1.0	U	
108-88-3-----	TOLUENE	1.0	U	
100-41-4-----	ETHYLBENZENE	1.0	U	
108-38-3/106-42-3	META & PARA XYLENES	1.0	U	
95-47-6-----	ORTHO XYLENE	1.0	U	

1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

MW965801

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water) WATER

Lab Sample ID: 9609052F

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VF6K702F

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column: DBVRX ID: 0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) ug/L	Q
---------	----------	---	---

1634-04-4-----	METHYL T-BUTYL ETHER_____	1.0	U
71-43-2-----	BENZENE_____	1.0	U
108-88-3-----	TOLUENE_____	1.0	U
100-41-4-----	ETHYLBENZENE_____	1.0	U
108-38-3/106-42-3	META & PARA XYLENES_____	1.0	U
95-47-6-----	ORTHO XYLENE_____	1.0	U

1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

MW964901

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609053F

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VF6K703F

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:DBVRX ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) ug/L	Q
---------	----------	---	---

1634-04-4-----	METHYL T-BUTYL ETHER_____	1.0	U
71-43-2-----	BENZENE_____	1.0	U
108-88-3-----	TOLUENE_____	1.0	U
100-41-4-----	ETHYLBENZENE_____	1.0	U
108-38-3/106-42-3	META & PARA XYLENES_____	1.0	U
95-47-6-----	ORTHO XYLENE_____	1.0	U

1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

TRIPBLANK

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609054F

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VF6K693F

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:DBVRX ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) ug/L		Q
1634-04-4-----	METHYL T-BUTYL ETHER	1.0	U	
71-43-2-----	BENZENE	1.0	U	
108-88-3-----	TOLUENE	1.0	U	
100-41-4-----	ETHYLBENZENE	1.0	U	
108-38-3/106-42-3	META & PARA XYLENES	1.0	U	
95-47-6-----	ORTHO XYLENE	1.0	U	

1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

VBLK1

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: VB606133

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VF6K691F

Level: (low/med) LOW

Date Received: / /

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:DBVRX ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) ug/L	Q
---------	----------	---	---

1634-04-4-----	METHYL T-BUTYL ETHER_____	1.0	U
71-43-2-----	BENZENE_____	1.0	U
108-88-3-----	TOLUENE_____	1.0	U
100-41-4-----	ETHYLBENZENE_____	1.0	U
108-38-3/106-42-3	META & PARA XYLENES_____	1.0	U
95-47-6-----	ORTHO XYLENE_____	1.0	U

B. TPH-Gas

1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

RB960101

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609046

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VD4G059

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:RTX1 ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) ug/L	Q
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-----TPH_____	50	U
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1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

MW965101

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609047

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VD4G060

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:RTX1 ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS		Q
		(ug/L or ug/Kg)	ug/L	
-----TPH		50	U	



1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

MW964401

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609048

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VD4G061

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:RTX1 ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS		Q
		(ug/L or ug/Kg)	ug/L	
-----TPH		50	U	

1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

MW960101

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609049

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VD4G062

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:RTX1 ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) ug/L	Q
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-----TPH	50	U
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1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

MW966201

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609050

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VD4G063

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:RTX1 ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg)	ug/L	Q
---------	----------	--	------	---

-----TPH		50	U
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1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

MW965401

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609051

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VD4G064

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:RTX1 ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.

COMPOUND

CONCENTRATION UNITS  
(ug/L or ug/Kg) ug/L

Q

-----TPH

50

U

1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

MW965801

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609052

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VD4G065

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:RTX1 ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg)	ug/L	Q
---------	----------	--	------	---

-----TPH		50	U
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1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

MW964901

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: 9609053

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VD4G066

Level: (low/med) LOW

Date Received: 06/12/96

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column: RTX1 ID: 0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS		Q
		(ug/L or ug/Kg)	ug/L	
-----	TPH	50	U	

1A  
VOLATILE COMPOUNDS ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

VBLK1

Lab Name: EA LABS

Contract:

Lab Code: EAENG

Case No:

SAS No: \_\_\_\_\_

SDG No:

Matrix: (soil/water)WATER

Lab Sample ID: VB606132

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: VD4G055

Level: (low/med) LOW

Date Received: / /

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 06/13/96

GC Column:RTX1 ID:0.53 (mm)

Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg)	ug/L	Q
---------	----------	--	------	---

-----TPH	50	U
----------	----	---

C. TPH-Fuel



1  
TOTAL PETROLEUM HYDROCARBONS      CLIENT SAMPLE NO.  
ANALYSIS DATA SHEET

Lab Name: EA LABORATORIES

RB96-01-01

Lab Code: EAENG

Contract: BRUNSWICK

Matrix: (soil/water)

WATER

Lab Sample ID: 9609046

Sample wt/vol:

1 L

Date Sampled: 06/10/96

Level: (low/med)

LOW

Date Received: 06/12/96

% Moisture:

N/A

Date Extracted: 06/13/96

Method:

8015M

Date Analyzed: 06/23/96

GPC Cleanup:

N

pH: \_\_\_\_\_

Dilution Factor: 1

ANALYTE

CONCENTRATION  
(ug/L)

Qualifier

TPH AS FUEL OIL #2

100

U

U Concentration below detection limit

1  
TOTAL PETROLEUM HYDROCARBONS      CLIENT SAMPLE NO.  
ANALYSIS DATA SHEET

Lab Name: EA LABORATORIES

MW96-51-01

Lab Code: EAENG

Contract: BRUNSWICK

Matrix: (soil/water)

WATER

Lab Sample ID: 9609047

Sample wt/vol:

1 L

Date Sampled: 06/10/96

Level: (low/med)

LOW

Date Received: 06/12/96

% Moisture:

N/A

Date Extracted: 06/13/96

Method:

8015M

Date Analyzed: 06/23/96

GPC Cleanup:

N

pH: \_\_\_\_\_

Dilution Factor: 1

ANALYTE

CONCENTRATION  
(ug/L)

Qualifier

TPH AS FUEL OIL #2

100

U

Concentration below detection limit

1  
TOTAL PETROLEUM HYDROCARBONS      CLIENT SAMPLE NO.  
ANALYSIS DATA SHEET

Lab Name: EA LABORATORIES

MW96-44-01

Lab Code: EAENG

Contract: BRUNSWICK

Matrix: (soil/water)

WATER

Lab Sample ID: 9609048

Sample wt/vol:

1 L

Date Sampled: 06/10/96

Level: (low/med)

LOW

Date Received: 06/12/96

% Moisture:

N/A

Date Extracted: 06/13/96

Method:

8015M

Date Analyzed: 06/23/96

GPC Cleanup:

N

pH: \_\_\_\_\_

Dilution Factor: 1

ANALYTE

CONCENTRATION  
(ug/L)

Qualifier

TPH AS FUEL OIL #2

100

U

U Concentration below detection limit

1  
TOTAL PETROLEUM HYDROCARBONS      CLIENT SAMPLE NO.  
ANALYSIS DATA SHEET

Lab Name: EA LABORATORIES

MW96-01-01  
0

Lab Code: EAENG

Contract: BRUNSWICK

Matrix: (soil/water)

WATER

Lab Sample ID: 9609049

Sample wt/vol:

1 L

Date Sampled: 06/10/96

Level: (low/med)

LOW

Date Received: 06/12/96

Moisture:

N/A

Date Extracted: 06/13/96

Method:

8015M

Date Analyzed: 06/23/96

PC Cleanup:

N

pH: \_\_\_\_\_

Dilution Factor: 1

ANALYTE

CONCENTRATION  
(ug/L)

Qualifier

TPH AS FUEL OIL #2

100

U

J Concentration below detection limit

1  
TOTAL PETROLEUM HYDROCARBONS  
ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

Lab Name: EA LABORATORIES

MW96-62-01

Lab Code: EAENG

Contract: BRUNSWICK

Matrix: (soil/water)

WATER

Lab Sample ID: 9609050

Sample wt/vol:

1 L

Date Sampled: 06/10/96

Level: (low/med)

LOW

Date Received: 06/12/96

% Moisture:

N/A

Date Extracted: 06/13/96

Method:

8015M

Date Analyzed: 06/23/96

GPC Cleanup:

N

pH: \_\_\_\_\_

Dilution Factor: 1

ANALYTE

CONCENTRATION  
(ug/L)

Qualifier

TPH AS FUEL OIL #2

100

U

U Concentration below detection limit

FORM I TPH

1/92 Rev.

1  
TOTAL PETROLEUM HYDROCARBONS      CLIENT SAMPLE NO.  
ANALYSIS DATA SHEET

Lab Name: EA LABORATORIES

MW96-54-01

Lab Code: EAENG

Contract: BRUNSWICK

Matrix: (soil/water)

WATER

Lab Sample ID: 9609051

Sample wt/vol:

1 L

Date Sampled: 06/10/96

Level: (low/med)

LOW

Date Received: 06/12/96

% Moisture:

N/A

Date Extracted: 06/13/96

Method:

8015M

Date Analyzed: 06/23/96

GPC Cleanup:

N

pH: \_\_\_\_\_

Dilution Factor: 1

ANALYTE

CONCENTRATION  
(ug/L)

Qualifier

TPH AS FUEL OIL #2

100

U

U Concentration below detection limit

1  
TOTAL PETROLEUM HYDROCARBONS      CLIENT SAMPLE NO.  
ANALYSIS DATA SHEET

Lab Name: EA LABORATORIES

MW96-58-01

Lab Code: EAENG

Contract: BRUNSWICK

Matrix: (soil/water)

WATER

Lab Sample ID: 9609052

Sample wt/vol:

1 L

Date Sampled: 06/10/96

Level: (low/med)

LOW

Date Received: 06/12/96

% Moisture:

N/A

Date Extracted: 06/13/96

Method:

8015M

Date Analyzed: 06/23/96

GPC Cleanup:

N

pH: \_\_\_\_\_

Dilution Factor: 1

ANALYTE

CONCENTRATION  
(ug/L)

Qualifier

TPH AS FUEL OIL #2

100

U

U Concentration below detection limit

1  
TOTAL PETROLEUM HYDROCARBONS      CLIENT SAMPLE NO.  
ANALYSIS DATA SHEET

Lab Name: EA LABORATORIES

MW96-49-01

Lab Code: EAENG

Contract: BRUNSWICK

Matrix: (soil/water)

WATER

Lab Sample ID: 9609053

Sample wt/vol:

1 L

Date Sampled: 06/10/96

Level: (low/med)

LOW

Date Received: 06/12/96

% Moisture:

N/A

Date Extracted: 06/13/96

Method:

8015M

Date Analyzed: 06/23/96

GPC Cleanup:

N

pH: \_\_\_\_\_

Dilution Factor: 1

ANALYTE

CONCENTRATION  
(ug/L)

Qualifier

TPH AS FUEL OIL #2

100

U

U - Concentration below detection limit



1  
TOTAL PETROLEUM HYDROCARBONS      CLIENT SAMPLE NO.  
ANALYSIS DATA SHEET

Lab Name: EA LABORATORIES

TB606131

Lab Code: EAENG

Contract: BRUNSWICK

Matrix: (soil/water)

WATER

Lab Sample ID: TB606131

Sample wt/vol:

1 L

Date Sampled: N/A

Level: (low/med)

LOW

Date Received: N/A

% Moisture:

N/A

Date Extracted: 06/13/96

Method:

8015M

Date Analyzed: 06/23/96

GPC Cleanup:

N

pH: \_\_\_\_\_

Dilution Factor: 1

ANALYTE

CONCENTRATION  
(ug/L)

Qualifier

TPH AS FUEL OIL #2

100

U

Concentration below detection limit